	Application No.	Applicant(s)
Notice of Allowability	10/709,974	SHANG ET AL.
	Examiner	Art Unit	
	Christyann Pulliam	2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *August 16, 2007 and October 5, 2007*.

2. ☒ The allowed claim(s) is/are *1-7,9,12-31 and 34-43*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

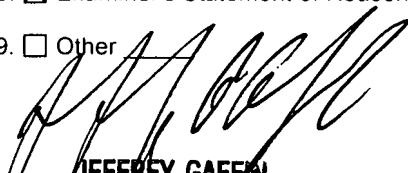   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

    Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____

JEFFREY GAFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

EXAMINER'S AMENDMENT

1.   A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 16, 2007 has been entered.

2.   A supplemental amendment was filed October 5, 2007.

3.   Claims 1-7, 9, 12-31, and 34-43 are pending.

4.   An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with G. Mack Riddle on October 9, 2007.

Amendments to the Claims:

5.   This listing of the claims will replace all prior versions of claims in the application:

Listing of Claims

6.   The application has been amended as follows:

1. (Previously Presented) A system which determines subscribers to which a published item of data is to be replicated, the system comprising:

a computer having a processor and memory;

an interface module which receives user input of lists from a plurality of subscribers, each list specifying items of data to be replicated to a given subscriber, wherein said lists include wildcard information and negation information;

a build module which builds an index based on the lists from the plurality of subscribers, the index including an entry for each item of data to be replicated and a bitmap string associated with each entry representing subscribers to each item of data, with at least one entry including a wildcard, and one entry including a default list of subscribers for items of data not matching any of the other entries, wherein the bitmap string includes one bit for each subscriber; and

a resolution module which receives a published item of data, determines subscribers to which the published item is to be replicated based on the index, and replicates enabling said published item to be replicated to subscribers, wherein time for determining subscribers to the published items does not depend on number of subscribers.

2. (Previously Presented) The system of claim 1, wherein at least one of the plurality of subscribers comprises a replicate database.

3. (Previously Presented) The system of claim 1, wherein the published item of data comprises an item of data published by a primary database for replication.

4. (Previously Presented) The system of claim 1, wherein the lists of from the plurality of subscribers include a list having negation information specifying at least one item of data not to be replicated to a particular subscriber.

5. (Previously Presented) The system of claim 1, wherein the lists from the plurality of subscribers include a list comprising a negation set indicating that all data other than items specified on the list should be replicated to a particular subscriber.

6. (Original) The system of claim 1, wherein the interface module receives at least one string identifying data to be replicated to a subscriber.

7. (Previously Presented) The system of claim 6, wherein the index comprises a hash table and the build module builds the hash table based, at least in part, on said at least one string.

8. (Canceled)

9. (Previously Presented) The system of claim 1, wherein the index built by the build module comprises a hash table of entries based on the lists from the plurality of subscribers.

10-11. (Canceled)

12. (Previously presented) The system of claim 1, wherein the build module builds at least one entry including a wildcard providing that all items of data of a certain type are to be replicated to subscribers of said at least one entry.

13. (Original) The system of claim 1, wherein the build module builds a bitmap string representing the default list of subscribers.

14. (Original) The system of claim 13, wherein the build module adds each subscriber having a list comprising a whole set to the bitmap string representing the default list of subscribers.

15. (Original) The system of claim 13, wherein the build module adds each subscriber having a list comprising a negation set to the bitmap string representing the default list of subscribers.

16. (Original) The system of claim 1, wherein the resolution module generates a hashed value based on at least one string identifying the published item.

17. (Original) The system of claim 16, wherein the resolution module searches for the hashed value in the index.

18. (Previously presented) The system of claim 17, wherein the resolution module determines subscribers to which the published item should be replicated based upon at least one entry in the index including the hashed value when the hashed value is found in the index.

19. (Previously presented) The system of claim 17, wherein the resolution module determines subscribers to which the published item should be replicated based upon the default list when the hashed value is not found in the index.

20. (Original) The system of claim 16, wherein the resolution module receives a plurality of strings identifying the published item and substitutes a wildcard for one of the strings to search for matching entries in the index which include a wildcard.

21. (Original) The system of claim 1, wherein the resolution module determines subscribers to which the published item should be replicated based upon the default list of subscribers for published items without matching entries in the index.

22. (Original) The system of claim 1, wherein the build module removes a subscriber from the index in response to a request to remove a subscriber.

23. (Currently amended) A method which determines subscribers to which a published item of data is to be replicated, the method comprising:

receiving lists from a plurality of subscribers, each list specifying items of data to be replicated to a given subscriber[[;]], wherein said lists include wildcard information and negation information;

building an index based on said lists from the plurality of subscribers, the index including any entry for each item of data to be replicated and a bitmap string associated with each entry identifying subscribers to which each item of data specified in said lists should be replicated, at least one entry including a wildcard, and one entry including a default list identifying subscribers to published items of data not matching any of the other index entries, wherein the bitmap string includes one bit for each subscriber;

given a published item of data, determining whether the published item matches at least one entry in the index[[;]], wherein time for determining subscribers to the published item does not depend on number of subscribers;

if the published item matches at least one entry in the index, generating a set of subscribers to which the published item is to be replicated based on the subscribers associated with said at least one entry; and

otherwise, returning the default list of subscribers to which the published item is to be replicated.

24. (Currently Amended) The method of claim 23, wherein [[a]] at least one of the plurality of subscribers comprises a replicate database.

25. (Currently Amended) The method of claim 23, wherein [[a]] the published item of data comprises an item of data published by a primary database for replication.

26. (Original) The method of claim 23, wherein said receiving step includes specifying items of data not to be replicated to a subscriber.

27. (Original) The method of claim 23, wherein said receiving step includes receiving a list comprising a negation set indicating that all data other than items specified on the list should be replicated to a subscriber.

28. (Original) The method of claim 23, wherein said receiving step includes receiving at least one string identifying data to be replicated to a subscriber.

29. (Previously Presented) The method of claim 28, wherein said index comprises a hash table and said building step includes building the hash table based on said at least one string.

30. (Original) The method of claim 29, wherein said step of building a hash table

includes building a bitmap string for each entry representing subscribers to an item of

data.

31. (Previously Presented) The method of claim 23, wherein said index comprises a

hash table and said building step includes building a hash table of entries.

32.-33. (Canceled)

34. (Previously Presented) The method of claim 23, wherein said step of generating a

bitmap string includes removing a subscriber from the bitmap string representing

subscribers to an item of data when the subscriber has specified the item of data as an

excluded item in a negation set.

35. (Previously presented) The method of claim 23, wherein said building step includes

building a bitmap string representing the default list of subscribers.

36. (Original) The method of claim 35, wherein said step of building a bitmap string for

representing the default list of subscribers includes adding each subscriber having a list

comprising a whole set.

37. (Previously presented) The method of claim 35, wherein said step of building a bitmap string representing the default list of subscribers includes adding each subscriber having a list comprising a negation set.

38. (Previously presented) The method of claim 23, wherein said building step includes building at least one entry including a wildcard indicating all items of data of a certain type should be replicated to a subscriber.

39. (Previously presented) The method of claim 38, wherein said determining step includes receiving a plurality of strings identifying the published item and substituting a wildcard for one of the strings to search for matching entries in the index which include a wildcard.

40. (Previously presented) The method of claim 23, wherein said determining step includes generating a hashed value based on at least one string identifying the published item.

41. (Previously presented) The method of claim 40, wherein said determining step includes searching for the hashed value in the index.

42. (Original) The method of claim 23, wherein said determining step includes building a list of subscribers based upon a plurality of matching entries.

43. (Previously Presented) A computer-readable medium having processor- executable

instructions which, when executed by a processor, perform the method of claim 23.

44. (Canceled)

Allowance

7.   Claims 1-7, 9, 12-31, and 34-43 are allowed over the prior art made of record.

8.   The following is a statement of reasons for the indication of allowable subject

matter:

The prior art of record (U.S. Patent Nos. 5,625,818 and 6,151,708 and U.S.

Patent Application No. 2004/0139166) does not disclose, teach, make obvious, or

suggest the claimed limitations of (in combination with all other features in the claim) "a

build module which builds an index based on the lists from the plurality of subscribers,

the index including an entry for each item of data to be replicated and a bitmap string

associated with each entry representing subscribers to each item of data, with at least

one entry including a wildcard, and one entry including a default list of subscribers for

items of data not matching any of the other entries, wherein the bitmap string includes

one bit for each subscriber" and the use of that index by the resolution module in which

the length of time it takes to determine subscribers is not based on the number of

subscribers, as claimed in independent claims 1 and 23, and in conjunction with the remaining claim provisions.

The dependent claims, being further limiting to the independent claims, definite and enabled by the Specification are also allowed.

9.   Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Application No. 2005/0165858 teaches data replication through a publisher database.

U.S. Patent No. 6,654,746 teaches allowing subscribers to be automatically given updated versions of the files they have selected sent to them when there are changes made.

U.S. Patent No. 6,718,361 teaches wildcard and negation information relating to topics of interest to users.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christyann Pulliam whose telephone number is 571-270-1007. The examiner can normally be reached on M-F 9 am-6 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 571-272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CRFP ꞔꞔꞔ
October 9, 2007

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